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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/087,998	03/05/2002	Yoshihiro Izumi	1035-368	4450
7590 12/15/2003				
NIXON & VANDERHYE P.C. 8th Floor 1100 North Glebe Road Arlington, VA 22201-4714			EXAMINER NGUYEN, VINCENT Q	
			ART UNIT 2858	PAPER NUMBER

DATE MAILED: 12/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/087,998	Applicant(s) IZUMI ET AL.	
	Examiner Vincent Q Nguyen	Art Unit 2858	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☒ None of:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____. | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

Regarding the term "SiN_x" (e.g. pages 10, second paragraph), what is SiN_x standing for? For the purpose of examination, examiner assumes that it is Silicon-Nitrite, Silicon-Nitrate, or polysilicon.

Appropriate correction and/or explanation is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1-3, 7-15, 17-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Suga (6,234,031).

Regarding claim 1, Suga discloses a device comprising (Figures 6, 7) scanning lines (113) and signal lines (114) formed on a substrate (101) in a grid pattern; switching elements (110) formed on the substrate (101) in each grid and connected to the scanning lines (113) and the signal lines (114); an insulating film (102), formed on the substrate (101) so as to cover the switching elements (110), having contact holes each of which is a perforation (Figure 3); sense electrodes (103) formed on the insulating film (102) and connected to the switching elements (110) via the contact holes; and a protective film (107) formed on the insulating film (102) so as to cover the sense electrode (103), wherein the insulating film (102) has a flat area, which excludes a surface where each contact hole is provided (Figure 11), on which the sense electrode is provided.

Regarding claim 2, Suga disclose the surface (surface of element 102) on which the sense electrode (103) is formed is flat when the insulating film (102) is formed.

Regarding claim 3, Suga discloses the insulating film is formed by application of an insulating material (This is not only for prior art of Suga but also true for every prior art of fingerprint e.g. element 721, figure 4).

Regarding claims 7, 8, Suga discloses (Figure 5) the sense electrode (812) is provided so as to be overlapped with at least either one of the scanning lines and the signal lines and switching elements (See figure 8B).

Regarding claim 9, Suga discloses a shade film (105) is provided on the switching element (110).

Regarding claims 10, 11, Suga discloses the sense electrode (103) and insulating (102) has shading property (Almost every material has shading property).

Regarding claim 12, Suga discloses an auxiliary electrode (Finger) (See also figure 1) for forming capacity with the sense electrode (103) (Electrode 512 figure 1).

Regarding claim 13, Suga discloses an auxiliary capacity (Finger) which is formed with either one of the sense electrode (the electrode at 519 points to) and an electrode (512) having a same electrical potential (512 and 519 having the same potential) as the sense electrode (512) is provided in a layer under the insulating film (605) (Figure 2).

Regarding claim 14, Suga disclose the substrate (101) is an insulating property (Most substrate is insulating property, if not, all of the conductive elements on it is short circuit).

Regarding claim 15, Suga discloses the substrate is a glass substrate (Column 8, line 1).

Regarding claim 17, Suga discloses (Figure 7) at least either one of a drive circuit (115) for applying a drive signal to the scanning lines (113) and a sense circuit (103, 109, 106, 110) for sensing a signal from the signal lines (114) is directly mounted on the glass substrate (Figure 6).

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Regarding claim 18, Suga discloses circuit (115) for applying a drive signal to the scanning lines (113) and a sense circuit (103, 109, 106, 110) for sensing a signal from the signal lines is monolithically (Column 3, line 22) formed on the glass substrate (101).

Regarding claim 19, Suga discloses the drive circuit (115) and the sense circuit are made of polysilicon.

Regarding claim 20, Suga discloses the protective film is made up of a dielectric film having a relative permittivity not less than 5 (Column 11, 53-55; column 12, lines 58-60).

Regarding claim 21, Suga discloses the protective film is made of polysilicon (Column 12, 40-67).

Regarding claim 22, Suga discloses the protective dielectric film is made up of dielectric film having a relative permittivity of (30) (Column 12, lines 40-52) not less than 10.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suga (6,234,031).

Regarding claims 23-25, Suga does not disclose the protective film includes a matter selected from the group consisting of Ta_2O_5 , TiO_2 , $SrTiO_3$, $BaTiO_3$, and $Ba_xSr_{1-x}TiO_3$; or made up of a Fluoresin; or formed by a dry transferring method. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate material such as Ta_2O_5 , TiO_2 , $SrTiO_3$, $BaTiO_3$, and $Ba_xSr_{1-x}TiO_3$; or made up of a Fluoresin, into the system of Suga because Suga taught that (column 12, lines 20-67) the deformation layer is required to be sufficiently soft when compared with skin of a finger, if material hardness exceeds 30 in the JIS hardness, the fingerprint pattern became unclear.

6. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suga (6,234,031) in view of Pires (6,411,726).

Regarding claims 4, 5, Suga does not disclose the insulating film is made of an organic matter. Pires discloses a device similar to that of Suga and further discloses insulating film (68) is made of an organic matter (Pires's column 4, lines 44-47).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to recognize the desirability of modifying Suga to incorporate an insulating, which is made of an organic matter as taught by Pires into the system of Suga because it would have been desirable to produce a fine line image of the fingerprint (Pires's column 4, lines 51-54).

Regarding claim 6, the only difference between Suga and Pires and the invention claim is that the claim recites the insulating has thickness between $1\mu\text{m}$ and $5\mu\text{m}$ while Suga and Pires are between $1\mu\text{m}$ and $10\mu\text{m}$.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to recognize the desirability of modifying Suga and Pires to incorporate the thickness of the insulating film between $1\mu\text{m}$ and $5\mu\text{m}$ into the system of Suga and Pires since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. MPEP 2144.05 *In re Aller*, 105 USPQ 233.

7. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suga (6,234,031) in view of Nakashima et al. (5,916,735).

Regarding claim 16, Suga does not disclose the substrate is made of plastic. Nakashima et al. discloses method for manufacturing fine pattern and further discloses a substrate is made of plastic for the purpose of reducing the size and weight of the device (Nakashima et al.'s column 2, lines 43-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate a substrate made of plastic into the system of Suga because Nakashima et al. taught that using plastic substrate would reduce the size and weight for the device.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Patent No. 6,248,655 discloses method for fabricating a fingerprint sensor having protective layer covers electrodes. Patent No. 6,011,273 discloses a fingerprint in a substrate which concern with the extrinsic pressure distributes on the device.

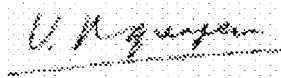
Contact Information

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vincent Q Nguyen whose telephone number is (703) 308-6186. The examiner can normally be reached on Mon-Fri 8:30am-5:00pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, N. Le can be reached on (703) 308-0750. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-5841 for regular communications and (703) 308-5841 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Vincent Q. Nguyen



December 4, 2003



N. Le
Supervisory Patent Examiner
Technology Center 2800